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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,090	08/06/2003	R. Jason Jouet	83,960	9325

7590 07/01/2005

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Bldg. D-326  
101 Strauss Ave.  
Indian Head, MD 20640-5035

EXAMINER
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SAVAGE, JASON L

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/637,090

Applicant(s)

JOUET ET AL.

Examiner

Jason L. Savage

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20030806</u> | 6) <input type="checkbox"/> Other: ____  |

***Claim Objections***

Claim 19 is objected to because of the following informalities: In line 1 of the claim, Applicant recites "the aluminum compound comprises  $\text{AlH}_3\text{!Nr}_1\text{R}_2\text{R}_3$ "; however, there is not any basis for the aluminum compound. Claim 18 recites aluminum mass, but is silent to any aluminum compound. For purposes of Examination, the claim has been treated as if Applicant had recited --wherein an aluminum composition for forming the unprotected aluminum mass comprises  $\text{AlH}_3\text{!Nr}_1\text{R}_2\text{R}_3$ --. Appropriate correction or clarification is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 6, 8, 15 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Akao et al. (US 5,827,584).

Akao teaches a protected aluminum mass of powders wherein the powder have a layer attached to the surface by treating the aluminum mass with a fatty acid (col. 37,

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In. 25-40). The protective attachment layer formed by treating with such a fatty acid would contain at least one carbon atom.

Regarding claims 2 and 8, Akao teaches the treating material may be a moiety selected from an aliphatic alcohol-based fatty acid wherein the aliphatic alcohol have between 1-12 carbon atoms and the fatty acid contain 10-22 carbon atoms (col. 56, In. 18-38). Although Akao does not recite the specific number of carbon atoms which are contained in the protective coating, since it teaches ranges which encompass the ranges claimed by Applicant, it would anticipate the claim limitations.

Regarding claim 6, although Akao is silent to the protective layer being a monolayer, it is the position of the Examiner that such a monolayer structure would have been formed.

Regarding claim 15, the protective layer formed by Akao would contain a functional group.

Regarding claims 18 and 20, Akao would anticipate the claim limitation since gathering the particles and treating them would meet the claim limitations of forming an unprotected aluminum mass and subsequently forming a reactant layer on the aluminum mass surface.

Claims 1-2, 4, 6, 8-9, 15 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Igarashi (US 6,207,226).

Igarashi teaches a protected mass of aluminum flakes wherein the flakes have a layer attached to the surface by treating the aluminum mass with an alkyl ester of

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phosphoric acid (col. 37, ln. 25-40). Igarashi teaches the alky ester contains between 8-18 carbon atoms and as such, would meet the claim limitation in claim 1 of containing at least one carbon atom.

Regarding claim 2, Igarashi teaches the attached layer may be formed from alcohol derivatives (col. 3, ln. 30-42).

Regarding claim 4, Igarashi teaches the aluminum flakes have dimensions of 10-30  $\mu\text{m}$  for the width and a thicknesses of 0.3-1  $\mu\text{m}$  (col. 51- 62). As such, it would meet the limitation of being micron-sized aluminum particles.

Regarding claim 6, although Igarashi is silent to the protective layer being a monolayer, it is the position of the Examiner that such a monolayer structure would have been formed.

Regarding claims 8-9, Igarashi's teaching that the alkyl ester may contain between 8-18 carbon atoms (col. 37, ln. 25-40) would anticipate the claim limitation wherein the carbon contents are between 8-18 for claim 8 and 9-12 for claim 9.

Regarding claim 15, the protective layer formed by Igarashi would contain a functional group.

Regarding claims 18 and 20, Igarashi would anticipate the claim limitation since gathering the particles and treating them would meet the claim limitations of forming an unprotected aluminum mass and subsequently forming a reactant layer on the aluminum mass surface.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-8 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akao et al. (US 5,827,584) in view of Brizzolara et al (US 6,259,092).

Regarding claims 3 and 6-7, Akao teaches what is set forth above however it is silent to treating the aluminum particles with a carboxylic acid to form the protective layer. Brizzolara teaches that protective monolayers for aluminum materials are known, wherein the protective monolayer is formed by treating the aluminum material with fatty acids such as carboxylic acid (col. 17, ln. 42-68). As such, it would have been obvious to one of ordinary skill in the art to have modified the article of Akao in view of the teachings of Brizzolara by selecting carboxylic acid as the fatty acid with a reasonable expectation of success of forming a protective monolayer on the aluminum particles.

Regarding claims 4-5, the references are silent to the particle size. However, absent a teaching of the criticality or showing of unexpected results, the claimed particle size is merely a design choice and does not patentably distinguish the present invention over the prior art of record. *Eskimo Pie Corp. v. Levous et al.*, 3 U.S.P.Q. 23. In re Rose 105 U.S.P.Q. 237. In re Dailey 149 U.S.P.Q. 47.

Regarding claim 8, the carboxylic acid containing 14 carbons of Brizzolara would meet the claim limitation.

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Regarding claims 10-12, although neither Akao or Brizzolara teach that the carboxylic acid is a perfluoroalkyl acid having the claimed formulas, Brizzolara does teach the general use of carboxylic acids which may contain 14 carbons (col. 17, ln. 65-67). It would have been obvious to one of ordinary skill in the art to have employed any known carboxylic acid, including perfluoroalkyl acids such as the 14 carbon containing acid claimed with a reasonable expectation of success. Absent a teaching of the criticality or showing of unexpected results from using the specific acids as claimed, they would not provide a patentable distinction over the prior art.

Regarding claims 13-14, the references are silent to the mass ratio or weight percentage of the attached layer in comparison to the aluminum particles. However, it would have been within the purview of one of ordinary skill in the art to have added the protective material coating in an amount to sufficiently protect the aluminum material. Absent a teaching of the criticality or showing of unexpected results from having the attached layer in the claimed amounts, it would not provide a patentable distinction over the prior art.

Claims 1 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berg et al. (US 4,770,728) in view of Akao et al. (US 5,827,584)

Berg teaches coating a mass of high energy explosive particles of aluminum with an aqueous dispersion of materials (col. 2, ln. 11-38). Berg further teaches that the aluminum powder may have been provided with a protective passivation coating (col. 2,

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ln. 38-43). However, Berg is silent to the protective coating comprising at least one carbon atom.

Akao teaches a protected mass of aluminum powders wherein the protective layer is formed from a carbon containing fatty acid (col. 37, ln. 25-40). It would have been obvious to one of ordinary skill in the art to have recognized that alternate protective coatings, such as those taught by Akao, could be used to provide the protective coating on the aluminum particles of Berg with a reasonable expectation of success. The protected mass of aluminum particles of Berg having been so modified would meet the limitations of claims 16-17.

It is well settled that the test of obviousness is not whether the features of one reference can be bodily incorporated into the structure of another and proper inquiry should not be limited to the specific structure shown by the references, but should be into the concepts fairly contained therein, and the overriding question to be determined is whether those concepts would suggest to one of ordinary skill in the art the modifications called for by the claims, *In re Van Beckum*, 169 USPQ 47 (CCPA 1971), *In re Bozek*, 163 USPQ 545 (CCPA 1969); *In re Richman*, 165 USPQ 509 (CCPA 1970); *In re Henley*, 112 USPQ 56 (CCPA 1956); *In re Sneed*, 218 USPQ 385 (Fed. Cir. 1983).

In response to the issue whether the reference is nonanalogous art, it has been held that the determination that a reference is from a nonanalogous art is twofold. First, one decides if the reference is within the field of the inventor's endeavor. If it is not, one proceeds to determine whether the reference is reasonably pertinent to the particular




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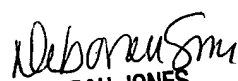
problem with which the inventor was involved, In re Wood, 202 USPQ 171, 174. In the instant case, both Berg and Akao are generally drawn to using aluminum particles which have been treated to have protective coatings formed thereon.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Savage whose telephone number is 571-272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jason Savage  
6-24-05

  
DEBORAH JONES  
SUPERVISORY PATENT EXAMINER